

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
25 August 2005 (25.08.2005)

PCT

(10) International Publication Number
WO 2005/077106 A3

(51) International Patent Classification⁷: **G01N 33/53**,
C12N 5/12, C12M 1/34, A61K 39/395

TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,
ZA, ZM, ZW.

(21) International Application Number:
PCT/US2005/004484

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

(22) International Filing Date: 9 February 2005 (09.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/543,004 9 February 2004 (09.02.2004) US

(71) Applicant (for all designated States except US): **NORTH-
EASTERN UNIVERSITY** [US/US]; 360 Huntington Av-
enue, Boston, MA 02115 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **TAKACS, Laszlo**
[US/US]; 816 Pamela Wood Street, Newbury Park, CA
91320 (US). **GUTTMAN, Andras** [US/US]; 12525
Maestro Court, San Diego, CA 92103 (US). **HANCOCK,
William, S.** [US/US]; 39 Chatham Street, Brookline, MA
02446 (US). **KARGER, Barry, L.** [US/US]; 62 Debo-
rah Road, Newton, MA 02459 (US). **DUVAL, Manuel**
[FR/US]; 11 Woodlawn Road, New London, CT 06320
(US). **BERNA, Patrick** [FR/FR]; 20 Rue De La Colonie,
F-27600 Gaillon (FR).

(74) Agents: **HEINE, Holliday, C.** et al.; Weingarten, Schur-
gin, Gagnebin & Lebovici LLP, Ten Post Office Square,
Boston, MA 02109 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY,

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations
- of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:

2 February 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MONOCLONAL ANTIBODY BASED BIOMARKER DISCOVERY AND DEVELOPMENT PLATFORM

(57) Abstract: A method or platform for monoclonal antibody based biomarker discovery is disclosed. The method according to the invention provides for the integration of analyte collection, hybridoma screening and nanovolume integrated mass spectrometry (NVIMS) to achieve a robust screening system that is capable, for example, of cutting 4-6 years off of the classical biomarker discovery and development process. The invention provides a platform for the rapid, high-throughput production, isolation and characterization of, e.g., disease specific biomarkers together with highly specific monoclonal antibodies. The method of the invention has a variety of applications such as, but not limited to, drug testing, biohazard applications, ecological applications, physiological applications and/or pathology screening applications. The method of the invention is also capable of being performed or used as or with a high-throughput screening process or system of the invention.



WO 2005/077106 A3